FLEAS

Life Cycle

EGGS are laid on the host animal and will eventually fall to the ground and hatch within 2-3 days.

LARVAE stages 1 through 3 are ground-based and feed on organic material. They live deep in the carpet or lawn.

PUPAE develop when the larvae form cocoons. They store their energy and emerge as adult fleas when conditions are right: 1. temperature and humidity at 80/80, 2. pressure sensitivity (*they can emerge when stepped on*).

An ADULT flea has up to 30 days to find a host or it will die. At this point, it will run out of food reserves it stored while in the pupae stage. After its first blood meal, the reproductive cycle begins and within 48 hours the female starts laying her eggs. From this point on, the flea does not leave the host, except by insecticide death, preening by the host or old age. The maximum adult life span is: male, 3-4 weeks; female, 6-9 weeks.

Behavior

The California summer provides perfect breeding, feeding and hatching conditions for this very successful parasite. When conditions of light, heat and pressure are right, the insect can go through its entire life cycle, from egg to adult, in as little as 10-14 days. The adult's maximum life span on the host is about 9 weeks and the average is 4-6 weeks. This applies only to an untreated animal.

Untreated animals can carry and support a colony of 60-100 fleas per week. Each female in a colony lays an average of 20 eggs per day and can produce as many as 600 eggs per month. A dog carrying approximately 60 fleas (50/50 male/female) will yield as many as 18,000 eggs in a month.

The adult flea spends its entire life on the host. Once it has had its blood meal, the flea must continue to feed and reproduce in order to keep its metabolism in balance. If it stops feeding and leaves the host, its chances for survival are greatly reduced. Adult fleas do not live in carpets, drapes, furniture or bedding (*eggs, larvae and pupae do*). The flea is a perfect example of a parasite. It must live on the host in order to survive. At this state, its only function is to reproduce, and it must constantly feed in order to mate.

When a flea feeds, it consumes the equivalent of its body weight in blood.

Fleas can live up to 2 years, but only in a perfectly controlled laboratory environment.

The vast majority of fleas in California are *Cterocephalides Felis* (cat fleas). Dog and human fleas are rarely seen.

Impact of Fleas

Fleas can cause:
1. anemia in small animals
2. allergies (*from 30%-50% of itching is caused by allergy to flea's saliva which contains anticoagulants*)
3. infections/hot spots
4. tape worm (*through ingestion of flea*)

Also, fleas may possibly transmit feline leukemia in multicat households.

Examples of Publicized Treatments That Are Ineffective Include:

Vitamin B/Brewers Yeast:
Researchers use this to feed fleas.

Deterrents: Pennyroyal, eucalyptus, citronella, garlic, walnut oil and cedar bedding are all momentary deterrents, but they will not stop a hungry flea.

Ultrasonic Sound Devices: They have been proven to be ineffective and may cause insects and other pests to reproduce at a faster rate.

Spott On: The FDA has not approved this product for use on small animals. This and other systemic poisons may be effective in killing fleas, but they may also kill the animal. They were developed for treating 1,000-pound cattle and the lower-end dosage may not safely translate to a 10-pound cat or 40-pound dog.

Proper Treatment

The effectiveness of a flea control program depends on keeping the animal and its environment clean, and on the regular use of proper insecticides.

1. Adulticides are applied externally to the animal through shampoos, powders, dips, sprays and flea collars. Shampoos should be rinsed thoroughly and powder or spray containing the same active ingredient as the shampoo can then be applied.

Internal medicine, such as Proban, kills the fleas when they bite.

2. Spray or bomb indoor environment **only** with a combination adulticide/ insect growth regulator (IGR). This kills both the adult and the egg/ larva. House bombing can be effective as long as 10 weeks.

3. Spray outdoor environment with a recommended insecticide or have it done professionally. Depending on weather conditions, outdoor spraying can last as long as 10-14 days, so it must be repeated during the flea season. Carbamates are light sensitive and sunlight reduces their effectiveness.

Resistance

There are pockets of resistant fleas in any given environment, but there is no scientific proof to document this due to the large number of variables that need to be controlled. Certain insecticides may appear to be ineffective when used at higher temperature (*80° and above*). In these instances, some insecticides may break down, and with higher temperatures, it is easier for the flea to metabolize the poison, thus its resistance is greater.

The flea is a very successful parasite and is thriving in our environment because:

1. There has been a pet population explosion(*20-25 million in California in the last 20 years*). This increased population has caused a higher density of fleas.

2. People are not using proper control methods.

Today's insecticides are effective in controlling flea populations when used on a regular basis. There is not likely to be a newer or more powerful poison developed for several years, so this means that flea control can only be accomplished by the veterinarians' awareness and their willingness to educate the pet-owning public. Lack of treatment or proper application may be the cause for increasing claims of resistance.

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